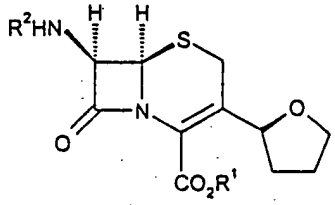
COUPLING PROCESS AND INTERMEDIATES USEFUL FOR PREPARING CEPHALOSPORINS

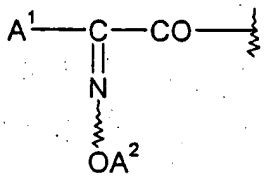
Abstract of the Invention

This invention relates to a novel process for the preparation of 3-cyclic-ether-substituted cephalosporins of formula I



I

wherein the group CO_2R^1 is a carboxylic acid or a carboxylate salt and R^2 has the formula:

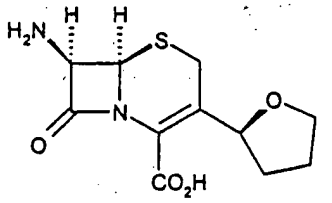


wherein

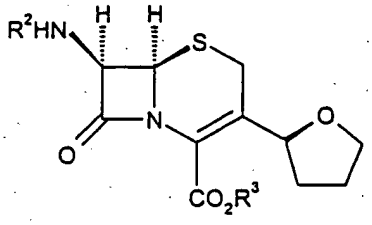
A^1 is selected from the group consisting of $C_{6\text{-}10}$aryl, $C_{1\text{-}10}$heteroaryl and $C_{1\text{-}10}$heterocyclyl;

A^2 is selected from the group consisting of hydrogen, $C_{1\text{-}6}$alkyl, $C_{3\text{-}10}$cycloalkyl, $C_{6\text{-}10}$aryl, $C_{1\text{-}6}$alkyl(CO)($C_{1\text{-}6}$)alkyl-O-, HO(CO)($C_{1\text{-}6}$)alkyl, mono-($C_{6\text{-}10}$aryl)($C_{1\text{-}6}$alkyl), di-($C_{6\text{-}10}$aryl)($C_{1\text{-}6}$alkyl) and tri-($C_{6\text{-}10}$aryl)($C_{1\text{-}6}$alkyl);

from a zwitterionic compound of formula II; or from a compound of formula V:



II ;



V;

wherein R^2 is as defined above and R^3 is para-nitrobenzyl or allyl.

The invention also relates to the preparation of the above compounds of formulae II and V.